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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/684,331	10/10/2000	Katsumi Amano	Q61111	2185

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SUGHRUE, MION, ZINN, MACPEAK & SEAS
2100 Pennsylvania Avenue, N.W.
Washington, DC 20037-3202

EXAMINER

ARMSTRONG, ANGELA A

ART UNIT	PAPER NUMBER
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2654

DATE MAILED: 12/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/684,331

Applicant(s)

AMANO ET AL.

Examiner

Angela A. Armstrong

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-2 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Kosaka (EP 0427485 A2).
2. Regarding claim 1, Kosaka teaches a speech synthesis apparatus and method. Kosaka provides for synthesizing speech with an apparatus comprising a sound source for generating a frequency signal, a vocal tract filter for filtering said frequency signal to generate a speech waveform signal, said filter having characteristics corresponding to a linear predictive coefficient calculated from respective phonemes in a phoneme series, at page 15, lines 15-38; dividing said phonemes into a plurality of frames having a predetermined time length, at page 4, lines 11-17; page 6, line 11 continuing to page 7, line 54; summing squares of speech samples in one of said plurality of frames for each frame as a frame power value, at page 6, line 11 continuing to page 7, line 54; page 8, line 23 continuing to page 9, line 40; standardizing frame power values at head and tail frames in one phoneme to predetermined values, respectively, to obtain a frame power value of an n-th frame, at page 6, line 11 continuing to page 7, line 54; page 8, line 23 continuing to page 9, line 40;

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summing squares of signal levels of a frame in said frequency signal to obtain a frame power correction value, and, at page 6, line 11 continuing to page 7, line 54; page 8, line 23 continuing to page 9, line 40;

providing a speech envelope signal by means of a function having variables of said standardized frame power values and said frame power correction value, and adjusting an amplitude level of said speech waveform signal as a function of the speech envelope signal, at page 6, line 11 continuing to page 7, line 54; page 8, line 23 continuing to page 9, line 40; page 15, line 39 continuing to page 16, line 32.

Regarding claim 2, additionally, Kosaka provides for providing power frequency characteristics based on said linear predictive coefficient corresponding to said n-th frame, calculating an average value of power values sampled from said power frequency characteristics at a predetermined frequency interval as a mean frame power value, calculating a speech waveform signal by means of a function having variables of said standardized frame power value, said frame power correction value and said mean frame power value, and adjusting an amplitude of said speech waveform signal as a function of said speech envelope signal, at page 6, line 11 continuing to page 7, line 54; page 8, line 23 continuing to page 9, line 40; page 15, line 39 continuing to page 16, line 32.

Regarding claim 4, Kosaka also provides for the frequency signal includes an impulse signal carrying a voiced sound and a noise signal carrying an unvoiced sound, at page 9, lines 45-50.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kosaka.
4. Regarding claim 3, Kosaka, at page 6, line 11 continuing to page 7, line 54; page 8, line 23 continuing to page 9, line 40; page 15, line 39 continuing to page 16, line 32, Kosaka teaches determining a power normalization function and making adjustments to the parameters using information of the normalized power and average power. Kosaka discloses the claimed invention except for the particular function as expressed in claim 3.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide for a speech envelope as a function expressed as the square root of (standardized power/(power correction * mean frame power)), since the general conditions of the adjustments as a function of normalized power and average power are disclosed in the prior art, and discovering an optimum or workable function of effective variables involves only routine skill in the art.

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Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Minova et al (US Patent No. 6,438,522) discloses method and apparatus for speech synthesis whereby waveform segments expressing respective syllables of a speech item are modified in accordance with rhythm, pitch and speech power patterns expressed by a prosodic template.


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Angela A. Armstrong whose telephone number is 703-308-6258. The examiner can normally be reached on Monday-Thursday 7:30-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (703) 305-9645. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.

Angela A. Armstrong
Examiner
Art Unit 2654

AAA
December 11, 2003


RICHEMOND DORVIL
SUPERVISORY PATENT EXAMINER